

DETAILED ACTION

This Office Action is in response to the Amendment filed 23 February 2010. Claims 1-6, 9-18 and 20-24 are currently pending. The Examiner acknowledges the amendments to claims 1, 9, 12, 13, 16, 18, 20 and 23 and cancelled claims 7, 8 and 19.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claim 20 is rejected under 35 U.S.C. 102(b) as being anticipated by Bair (US Patent No. 5,562,692).**

3. Regarding claim 20, Bair discloses a fluid jet surgical cutting tool including a sterile working fluid, a supply chamber (51) capable of storing the working fluid, the supply chamber being defined by a movable piston (36), at least one chamber outlet (50) and at least one supply chamber wall; a seal (53) that is capable of hermetically enclosing the sterile working fluid in the supply chamber, the seal capable of irreversibly opening upon application of high pressure (column 3, lines 10-67, column 4, lines 1-35, Fig. 3).

4. **Claims 22-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Gumb et al. (US PGPub No. 2003/0171670A1).**

5. Regarding claim 22, Gumb et al. disclose a device outlet located at the distal end of a conduit (1), a magazine (7) including a plurality of receptacles, the receptacles capable of receiving a supply cartridge (5) that encloses a working fluid in a supply

Art Unit: 3731

chamber (7) into which a piston (10) is disposed, the conduit being capable of providing fluid communication between the device outlet and the at least one chamber outlet (4) of each of the supply cartridges ([0016-0018], Figs. 1 and 2).

6. Regarding claims **23 and 24**, Gumb et al. disclose an opening of a magazine (7) capable of interchangeably receiving a supply device having a plurality of syringes or “supply chambers” (5), the supply chambers having a cylindrical side wall and a piston (10) that closes one end of the cylindrical side wall; and a plurality of actuation devices (9), each of the plurality of actuation devices actuating the piston of a respective one of the plurality of supply chambers in a single direction, a travel sensor (11) associated with each plurality of actuation devices and capable of indicating when the actuation device has reached a final position, wherein a wall of the opening matingly opposes a portion of the cylindrical side wall of each of the supply chambers ([0016-0018], Figs. 1 and 2).

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 1-4, 6, 9, 12-14, 16 and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gumb et al. (US PGPub No. 2003/0171670A1) in view of Kozam et al. (US Patent No. 4,109,653).**

Art Unit: 3731

9. Regarding claims **1, 4 and 6**, Gumb et al. disclose an arrangement of a plurality of supply cylinders (5), each supply cylinder including a side wall, a piston (10), working fluid enclosed within each supply cylinder, the working fluid being capable of being expelled by the pistons through outlets at the distal end of the syringe before the pressure sensors (2); a pressure conduit (1) in communication with the outlets of each of the supply cylinders and into which a working fluid is expelled; a plurality of actuation devices (9) to actuate the pistons, and a change-over device that is capable of shifting the actuation from a first piston to the next piston of the plurality of supply cylinders such that the working fluid can be ejected into the pressure conduit from consecutively emptying supply cylinders; a change-over magazine (7) that receives the plurality of supply cylinders, and wherein the change-over magazine defines chambers, each of which receives and closely surrounds the side wall of the respective one of the plurality of supply cylinders ([0016-0018, Figs. 1, 2). However, Gumb et al. fails to expressly disclose the working fluid being enclosed within the cylinder in a leak proof manner.

10. Kozam et al. teach a device including a syringe or "cylinder"(5) including a one-way valve or "transport gasket" (70, 72) that permits fluid to flow in one direction when fluid is placed under pressure by a plunger or "piston" (18, 20) (column 3, lines 50-67, column 4, lines 1-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the supply cylinders of Gumb et al. with one-way valves, as taught by Kozam et al., to prevent reverse fluid flow and the opening of the valve without the cylinder being under pressure from the pistons.

Art Unit: 3731

11. Regarding claim **2**, Gumb et al. disclose a change-over device that is capable of providing consecutive actuation periods of each of the pistons (10) such that expulsion of the fluid into the pressure conduit is uninterrupted [0016].

12. Regarding claim **3**, Gumb et al. disclose a sealing device (3) providing leak proof connection to each fluid outlet (Fig. 1).

13. Regarding claim **9**, Gumb et al. disclose the change-over magazine (7) including collection devices (4) to conduct working fluid from the cylinders to the pressure conduit (Fig. 1).

14. Regarding claim **12**, Gumb et al. disclose the change-over magazine capable of being irreversibly connected to the pressure conduit via hoses (4) to form a single-use unit.

15. Regarding claim **13**, the combination of Gumb et al. and Kozam et al. discloses a plurality of supply cylinders (5) arranged in the change-over magazine (7) that around a central axis of the change-over magazine wherein the central axis is defined by an axis in the center of the magazine between the middle cylinders (Fig. 1a).

16. Regarding claim **14**, the combination of Gumb et al. and Kozam et al. discloses a plurality of cylinders (5) arranged parallel to the central axis of the change-over magazine (Fig. 1a).

17. Regarding claim **16**, Gumb et al. disclose a plurality of supply cylinders that are capable of being individually replaced [0016].

Art Unit: 3731

18. Regarding claim **17**, Gumb et al. disclose a change-over magazine (7) having integrally formed supply cylinders (5) wherein the parts of the device together constitute a whole or complete device (Fig. 1a).

19. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gumb et al. (US PGPub No. 2003/0171670A1) in view of Kozam et al. (US Patent No. 4,109,653), as applied to claim 1 above, and further in view of Lee (US Patent No. 5,019,045).

20. Regarding claim **5**, the combination of Gumb et al. and Kozam et al. discloses all of the limitations previously discussed except for a back-flow barrier such that after the piston has reached a position in which the fluid has been expelled from its associated supply cylinder, the piston cannot be pushed back into a previous position.

21. Lee teaches a piston (16) disposed within a cylinder (10) wherein stops or "back-flow barrier" (24) are provided on the inside walls on the body portion (12) such that the piston (16) is prevented from being removed from within the cylinder once advanced past the stops (column 5, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the device of the combination of Gumb et al. and Kozam et al. with a back-flow barrier, as taught by Lee, to prevent the reuse of the syringe.

22. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gumb et al. (US PGPub No. 2003/0171670A1) in view of Kozam et al. (US Patent No. 4,109,653), as applied to claim 1 above, and further in view of Sielaff et al. (US Patent No. 3,983,864).

Art Unit: 3731

23. Regarding claim **10**, the combination of Gumb et al. and Kozam et al. discloses all of the limitations previously discussed except for ventilation devices for the removal of air from conduit sections located between the outlets of the cylinders and the pressure conduit.

24. Sielaff et al. teaches a device including a pump having a cylinder and piston (34a), ventilation devices (38) being located between the outlets of the cylinder of the pump and the pressure conduit (40) (column 5, lines 60-65, column 6, lines 40-67, Fig. 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the device of the combination of Gumb et al. and Kozam et al. with ventilation devices, as taught by Sielaff et al., to remove any gas before expelling fluid into a body.

25. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gumb et al. (US PGPub No. 2003/0171670A1) in view of Kozam et al. (US Patent No. 4,109,653) in view of Sielaff et al. (US Patent No. 3,983,864) as applied to claim 10 above, and further in view of Childers et al. (US PGPub No. 2004/0019313A1).

26. Regarding claim **11**, the combination of Gumb et al. and Kozam et al. discloses all of the limitations previously discussed except for the ventilation devices being disposed within the change-over magazine.

Childers et al. teach a device including a port vent being integral to a cassette, the port vent being used for venting air purged from the working fluid due to pumping [0038]. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the device of the combination of Gumb et

Art Unit: 3731

al., Kozam et al. and Sielaff et al., with ventilation devices within the change-over magazine, as taught by Childers et al., to purge air from the working fluid [0038].

27. Claims 13 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gumb et al. (US PGPub No. 2003/0171670A1) in view of Kozam et al. (US Patent No. 4,109,653), as applied to claim 1 above, and further in view of Schwartz et al. (US PGPub No. 2003/0009132A1).

28. Regarding claims **13 and 15**, the combination of Gumb et al. and Kozam et al. discloses all of the limitations previously discussed except for the change-over magazine having a central axis and rotating around the central axis.

29. Schwartz et al. teach a device including a housing (132) having cylinders (44, 46) and a piston (48) disposed and rotatable around the pivot pin (134) located at a central axis ([0085], Fig. 24). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have formed the magazine of the device of the combination of Gumb et al. and Kozam et al. to be rotatable about a central axis, as taught by Schwartz et al., to eliminate the need of multiple actuation devices wherein the rotation of the magazine will place the desired piston in contact with the actuation device.

30. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gumb et al. (US PGPub No. 2003/0171670A1) in view of Kozam et al. (US Patent No. 4,109,653) in view of Lee (US Patent No. 5,019,045).

31. Regarding claim **18**, Gumb et al. disclose a device outlet at the distal end of a conduit (1), a plurality of supply chambers (5) enclosing a working fluid, each supply

Art Unit: 3731

chamber defined by a piston (10), at least one chamber outlet (4) and at least one supply chamber wall; and the conduit (1) being capable of providing fluid communication between the device outlet and the at least one chamber outlet of each of the plurality of supply chambers ([0016-0018, Figs. 1, 2). However, Gum et al. fails to disclose a seal that hermetically encloses the working fluid in the supply chamber and a locking mechanism that prevents a return movement of the piston.

Kozam et al. teach a device including a syringe or "cylinder"(5) including a one-way valve or "transport gasket" (70, 72) that permits fluid to flow in one direction when fluid is placed under pressure by a plunger or "piston" (18, 20) (column 3, lines 50-67, column 4, lines 1-10). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the supply cylinders of Gumb et al. with one-way valves, as taught by Kozam et al., to prevent reverse fluid flow and the opening of the valve without the cylinder being under pressure from the pistons.

Lee teaches a piston (16) disposed within a cylinder (10) wherein stops or "back-flow barrier" (24) are provided on the inside walls on the body portion (12) such that the piston (16) is prevented from being removed from within the cylinder once advanced past the stops (column 5, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the device of the combination of Gumb et al. and Kozam et al. with a back-flow barrier, as taught by Lee, to prevent the reuse of the syringe.

Art Unit: 3731

32. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bair (US Patent No. 5,562,692) in view of Lee (US Patent No. 5,019,045).

33. Regarding claim **21**, Bair discloses all of the limitations previously discussed except for the supply chamber including a locking mechanism that prevents a return movement of the movable piston.

Lee teaches a piston (16) disposed within a cylinder (10) wherein stops or "locking mechanism" (24) are provided on the inside walls on the body portion (12) such that the piston (16) is prevented from being removed from within the cylinder once advanced past the stops (column 5, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have provided the device of Gumb et al. with a locking mechanism, as taught by Lee, to prevent the reuse of the device.

Response to Arguments

34. Applicant's arguments with respect to the claims have been considered but are moot in view of the amendments. New ground(s) of rejection have been submitted above.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JOCELIN TANNER whose telephone number is (571)270-5202. The examiner can normally be reached on Monday through Thursday between 9am and 4pm.

Art Unit: 3731

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Hughes can be reached on 571-272-4357. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

If there are any inquiries that are not being addressed by first contacting the Examiner or the Supervisor, you may send an email inquiry to

TC3700_Workgroup_D_Inquiries@uspto.gov.

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11/07/2011

Examiner, Art Unit 3731

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